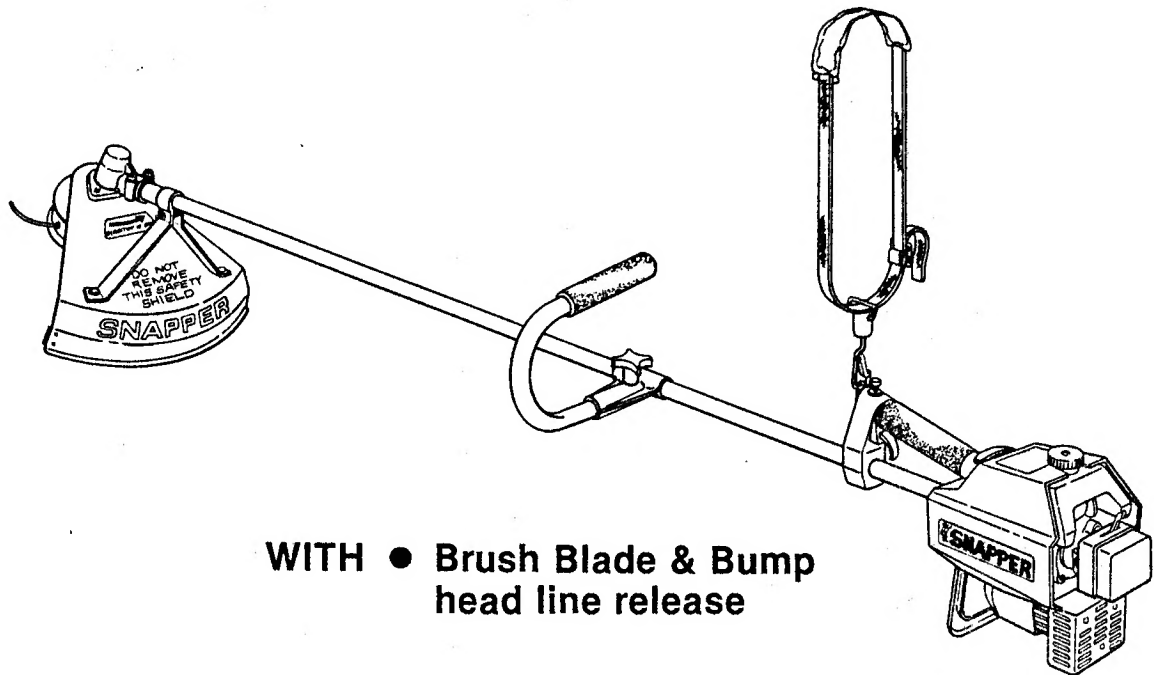


Safety Instruction & Operator's Manual for **SNAPPER**®

MODEL 310 GRASS, WEED & BRUSH TRIMMER



WITH • Brush Blade & Bump
head line release

Thank you for buying a Snapper Product! Before operating your trimmer, read this manual carefully and pay particular attention to the Important Safety Instructions on page two. Remember that trimmers and all power equipment can be dangerous if used improperly and keep in mind that safety requires careful use in accordance with the instructions andcommon sense!

GENERAL SPECIFICATIONS & FEATURES

ENGINE DETAILS

Type..... Air-Cooled 2 Cycle
Displacement..... 31cc
Operating RPM..... 7000
Idle (Declutch) RPM..... 2800
Fuel Mix Ratio..... 20:1
Fuel Tank Capacity..... 18 oz.
Spark Plug..... Champ DJ85
Spark Plug Gap..... .025"

TRIMMER DETAILS

Cutting Head..... Bump-N-Feed
Head Diameter..... 4.5"
Cutting Line Dia..... .095"
Cutting Line Type..... Twin
Cutting Path..... 18"
Blade (Standard)..... 8 point
Unit Weight (Approx)..... 14.5 lbs.

SNAPPER POWER EQUIPMENT

McDonough, GA., 30253 U.S.A.



IMPORTANT SAFETY INSTRUCTIONS

WARNING: Failure to comply with the following instructions may result in serious injury to the operator or other persons. The owner of the trimmer must understand these instructions and, furthermore, must allow only persons who understand these instructions to operate the unit. Each person operating the trimmer must be of sound mind and body and must not be under the influence of any substance which might impair vision, dexterity, or judgement. If you have any questions pertaining to your trimmer which your dealer cannot answer to your satisfaction, call or write the Customer Service Department at SNAPPER POWER EQUIPMENT, McDonough, Georgia 30253, (Phone 404-957-9141).

TRAINING

1. Read this Manual carefully. Be thoroughly familiar with the controls and proper use of the equipment.
2. DO NOT allow children in yard when trimmer is operated.
3. DO NOT allow pre-teenager children to operate trimmer.
4. Allow only responsible teenagers with mature judgement to operate trimmer and only under close supervision.
5. Keep the area clear of all persons, particularly small children, and pets.

PREPARATION

1. DO NOT operate trimmer without safety glasses or goggles.
2. Thoroughly inspect the area where the trimmer is to be used and remove all stones, sticks, wire, bones and other objects that could cause injury if thrown at high speeds.
3. Do not operate trimmer when barefoot or wearing open sandals. Always wear substantial footwear and long pants.
4. Never operate trimmer without proper guards, shields or other safety protective devices in place and properly connected. Inspect to determine that these safety devices are installed properly, are in good repair, and operate properly. If the condition or operation of these devices are questionable, they must be repaired or replaced before using the trimmer.
5. Fill gasoline tank before starting engine. Mix in an approved gasoline container. Do not smoke near open gasoline container. Do not fill gasoline tank indoors or when engine is running. Allow engine to cool for at least ten minutes before refilling. Wipe off any spilled gasoline before starting engine. Move away from fueling site before starting engine. Do not run engine indoors.
6. Use trimmer only in daylight or in good artificial light.

7. Never operate trimmer in wet grass. Keep a firm hold on the handle and walk slowly, never run.
8. Operate only where firm footing is assured. DO NOT operate from a ladder or any other place where use of hands would ordinarily be necessary to prevent falls.

OPERATION

1. Do not overspeed engine.
2. Do not put hands or feet near or under rotating parts while engine is running.
3. Stop or idle engine when crossing gravel drives, walks, or roads, and under any conditions where thrown objects might be a hazard.
4. After striking a foreign object or if unit vibrates abnormally, stop the engine, disconnect and secure spark plug wire. Inspect the unit for any damage and repair the damage.
5. Stop engine before leaving unit.
6. Before cleaning, repairing or inspecting, make certain head or blade has stopped. Disconnect and secure spark plug wire away from plug to prevent accidental starting.
7. When using blade, hold unit firmly and wear harness to prevent loss of control due to blade bounce upon contact with hidden solid objects.

MAINTENANCE AND STORAGE

1. Keep all nuts, bolts, and screws tight to be sure unit is in safe operating condition.
2. Never store unit with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.
3. To reduce fire hazard, keep unit free of grass, leaves, or excessive grease.
4. Have your trimmer inspected and serviced each year by an authorized SNAPPER dealer. Determine if any additional devices are available which might upgrade the safety of your trimmer.
5. Use only factory specified SNAPPER attachments, accessories and fasteners.

OPERATING INSTRUCTIONS

PRE-MIX FUEL IN 20:1 RATIO

For proper lubrication, the engine on the Model 310 must operate on fuel mixed in a ratio of 20 parts gasoline to 1 part oil. Use a good quality regular grade leaded gasoline and a SAE 40 weight 2-cycle air-cooled engine oil. Do not use unleaded fuel, gasohol, or gasoline with special additives. The 20 to 1 ratio equals 6.4 ounces of oil to each gallon of gasoline (U.S. Standard measurements). Refer to the chart below for other 20 to 1 mix ratios.

U.S. STANDARD

GASOLINE(U.S.Gallons)	1	2	2.5	3	4	5
2-CYCLE OIL(Ounces)	6.4	12.8	16	19.2	25.6	32

METRIC

GASOLINE(Liters)	1	2	2.5	3	4	5
2-CYCLE OIL(Ounces)	1.7	3.4	4.25	5.1	6.8	8.5
2-CYCLE OIL(1ml = 1cc)	50	100	125	150	200	250

Pre-mix the fuel in an approved container while observing all safety precautions relating to handling of fuel. Add some gasoline to the container first, then the oil. Close the container and shake vigorously to thoroughly mix the fuel; open the container and add the remaining amount of gasoline to correct ratio. Shake the container to mix the fuel each time before filling the trimmer fuel tank. Do not add fuel to hot trimmer--allow it to cool.

START-STOP PROCEDURE

Become thoroughly familiar with the location and function of all controls before operating the trimmer. Be prepared to stop quickly in the event of an emergency--stop the engine by depressing and holding the red push button on the inclined handle down until the engine stops. Stop the cutting head or blade by releasing the throttle trigger which allows the speed to drop below 2800 RPM where declutching of the drive will occur. After filling the fuel tank as described in foregoing, the following procedure is suggested for starting the unit.

1. Place trimmer on flat surface or ground with weight firmly balanced on engine stand and shield.
2. Move to right side of engine and facing rear of unit, squeeze throttle trigger with right hand.
3. Slide choke lever to full CHOKE position (cold start), then pull on starter rope with your left hand with short quick strokes several times until the engine "pops".
4. Slide the choke lever to PARTIAL position and repeat pulling the starter rope but in full strokes while holding the throttle trigger against the handle until the engine starts and runs. CAUTION: The trimmer head or cutting blade will turn and continue turning until the trigger is released.
5. After a brief 5 second warm up period at full throttle, move the choke lever to RUN position then release the trigger to return engine to idle speed.

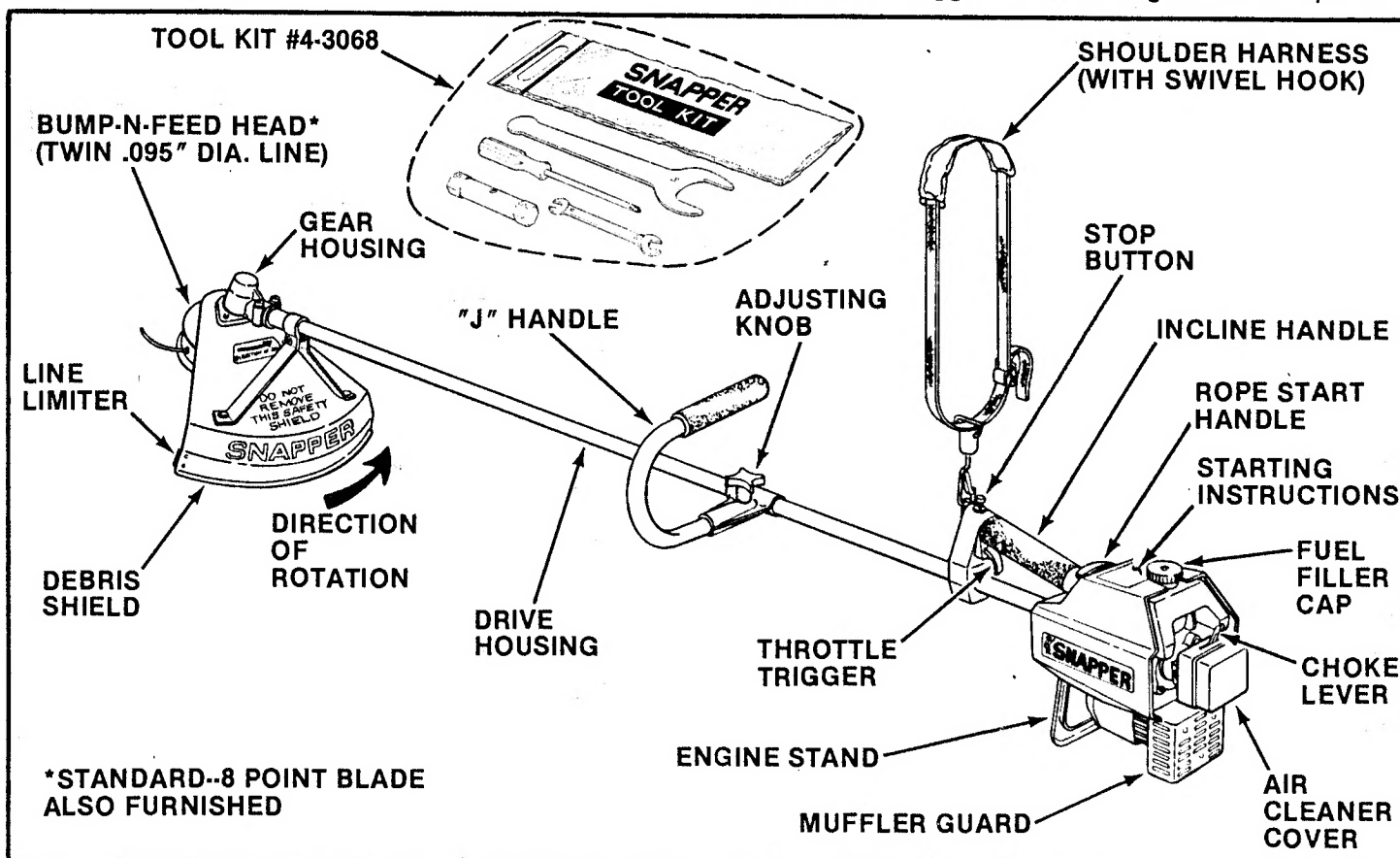


FIGURE 1 - LOCATION OF CONTROLS & OTHER FEATURES

OPERATION (Continued)

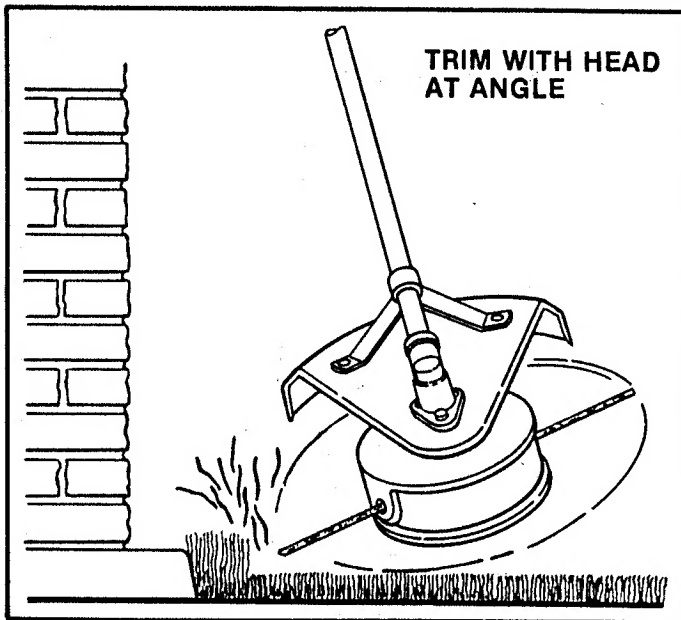


FIG. 2 - ANGLE TRIMMING

6. Allow the engine to warm up at idle for a short period of time then move to the left side, lift unit and slip on the harness over your head onto left shoulder.

7. Grasp the J-handle with your left hand and squeeze the throttle trigger with your right hand to increase speed beyond 2800 R.P.M. to engage the clutch and start the trimmer head or cutting blade. Refer to following section for operating instructions.

8. Stop unit by depressing and holding the red button down with your right thumb until engine comes to a complete halt. Release trigger to declutch drive whenever time permits.

NOTE: To prolong life of recoil starter and rope, do not pull rope out all the way or allow it to snap back when released--carefully guide it back into retracted position after each pull.

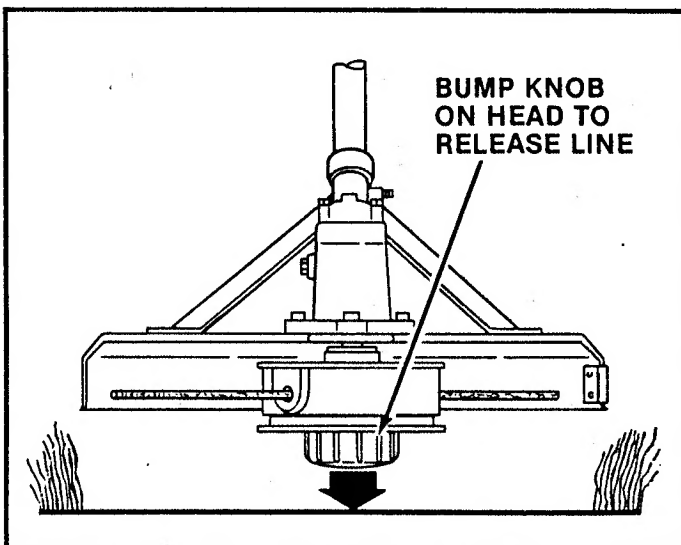


FIG. 3 - BUMP HEAD TO RELEASE

TRIMMING OPERATION

When using the Model 310 in the line trimmer mode with the BUMP-N-FEED head installed, keep each end of the twin line not less than 3 inches away from the outer edge of the head. This would produce an approximate cutting path of 10 1/2 inches. The line can be extended to a maximum of 6 3/4 inches to produce an 18" path, however, if extended more than this, the ends of the line will be clipped off by the line cutting blade which is part of the debris shield.

LINE ADJUSTMENT: The BUMP-N-FEED head furnished as original equipment on the Model 310, uses centrifugal force to automatically release about 1" of line each time the head is bumped while the unit is running at high operating speeds. The line will not advance due to insufficient centrifugal force at low speed. Also note that automatic line release is less likely to occur as the line becomes shorter. Keep the line extended at least 3" for smoother release. To release new line, operate the unit at highest RPM and bump the head lightly against a clear surface such as bare ground as shown in Figure 3. The unit may stall if bumped in tall or dense grass or brush. The line may also be advanced manually with the engine stopped. To advance manually, push the bump knob and hold against the head and pull out desired length of line. If the line is too long, release the knob and turn in direction indicated **REWIND LINE**. Refer to the Service Section for replacing line and or BUMP-N-FEED head.

LINE TRIMMER OPERATION: Always swing trimmer slowly from right to left in semi-circular motion. To trim, hold the cutting head at an angle to the ground. Allow the tips of the line to do the trimming. Do not force - let the unit trim at natural pace. Hold the head so that the cutting line is parallel to the ground for mowing and or sweeping operation. Keep the head above the ground to avoid scalping and unnecessary wear of the head.

WARNING: It is normal for the gear housing (figure 5) to become very warm after extended periods of operation. While the temperature should not become high enough to cause burns, it could reach levels very uncomfortable to the touch.

WEED CUTTING OPERATION

Heavy weed cutting can be done with the 8 point blade (standard), or an optional blade. Cut in semi-circular motion from right to left. Always use the harness and swing the unit slowly especially for heavy growth. **DO NOT** attempt to cut solid vines, trees, and keep away from hard objects such as pipes, metal fences, rocks, etc. The blade will tend to bounce away from objects it cannot cut, causing the operator to lose balance and control; so, guard against this when using blades! Refer to the Service Section for installing cutting blades.

SERVICE

SERVICE ASSISTANCE & PARTS

To retain the quality of your trimmer, use genuine SNAPPER replacement parts only! Contact your local SNAPPER dealer for parts and service assistance. Always mention the trimmer model and serial number as found on the nameplate attached to the lower left side of the engine. The information in the parts section furnished with your trimmer is of course subject to change. Up-to-date parts manuals covering your trimmer are available at your dealer. For the nearest SNAPPER dealer, check the yellow pages under the heading LAWN-MOWERS.

AIR CLEANER - SERVICE EVERY 10 HOURS

Every 10 hours or more, frequently if operating under extremely dusty or dirty conditions, service the air cleaner as follows:

1. Move the choke lever to CHOKE position. This closes off the intake port to prevent dirt from entering the carburetor while servicing.
2. Squeeze the air cleaner cover at top and bottom to disengage lock tabs. After removing cover, pull the filter element out of the cover.
3. Wash the filter element in kerosene or dishwashing detergent, squeeze dry and oil with small amount of SAE 30 engine oil. Squeeze element again to distribute oil evenly. DO NOT use gasoline.
4. Clean the cover and surface of carburetor plate, insert the serviced filter element in the proper position in pins of cover then snap the cover in place on carburetor plate.

NOTE: Replace filter element if frayed or cracked. Refer to the 310 parts section for correct replacement number.

DRIVE SHAFT - SERVICE EVERY 10 HOURS

To prolong the life of the flexible drive shaft, remove, clean, re-grease and reverse it after every 10 hours of operation. Service the drive shaft with engine stopped as follows:

1. Loosen the three screws on top of the gear head and the nut on the shield brace then slide the head-shield off the end of the drive tube housing as a unit.
2. Mark the protruding end of the flex shaft so that it can be reversed when reassembled. Pull the flex shaft out of the tube liner and wipe the shaft clean.
3. Coat entire length of flex shaft with liberal amount of Mobil #532 (or equivalent) bearing grease. DO NOT use graphite grease on shaft.

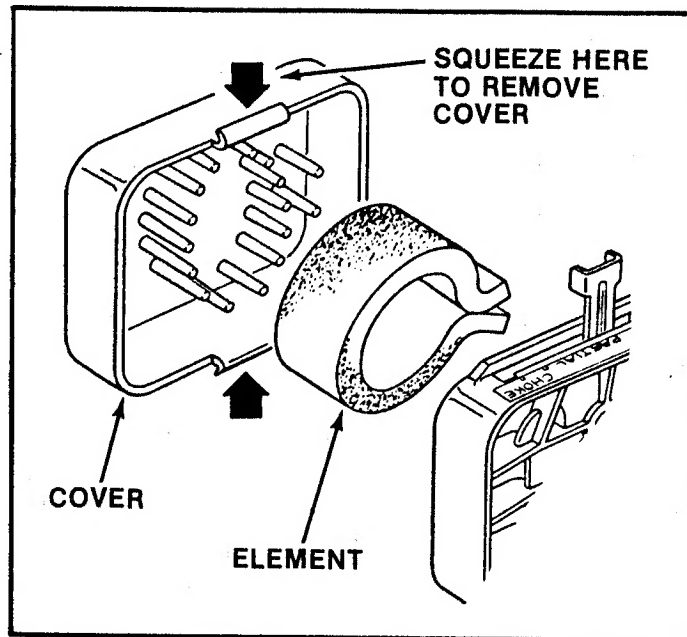


FIG. 4 - AIR CLEANER SERVICE

4. Reverse ends of shaft and insert all the way into liner and tube. Turn shaft to align with square opening in clutch drum. If the end of the shaft protrudes more than 3/4" from the edge of the drive tube, the shaft is not fully engaged in drum. When properly installed, reinstall the drive head-shield & brace assembly on the drive tube housing and secure the fasteners on the head and brace to lock in position. (See note in Figure 5 below for aligning gear head on tubing.)

GEAR HOUSING - EVERY 50 HOURS

Every 50 hours, remove the check plug on the right side of the gear head and check for lubricant. If dry, add a good quality lithium base multi-grease until level is up to but not over bottom edge of fill hole.

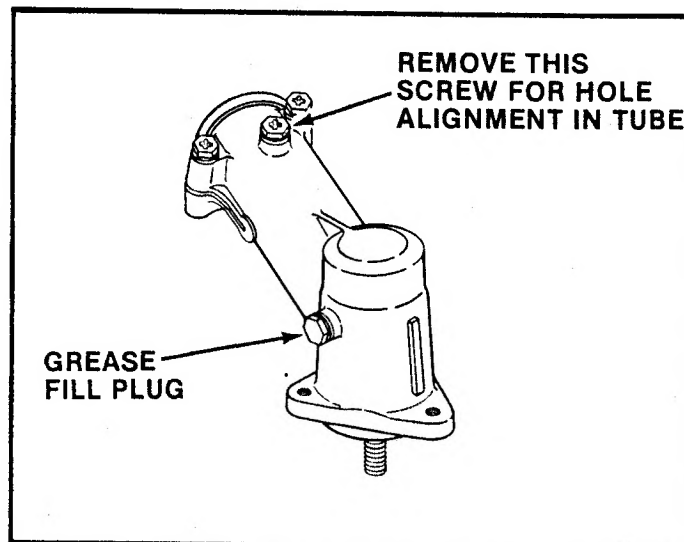


FIG. 5 - GEAR HOUSING

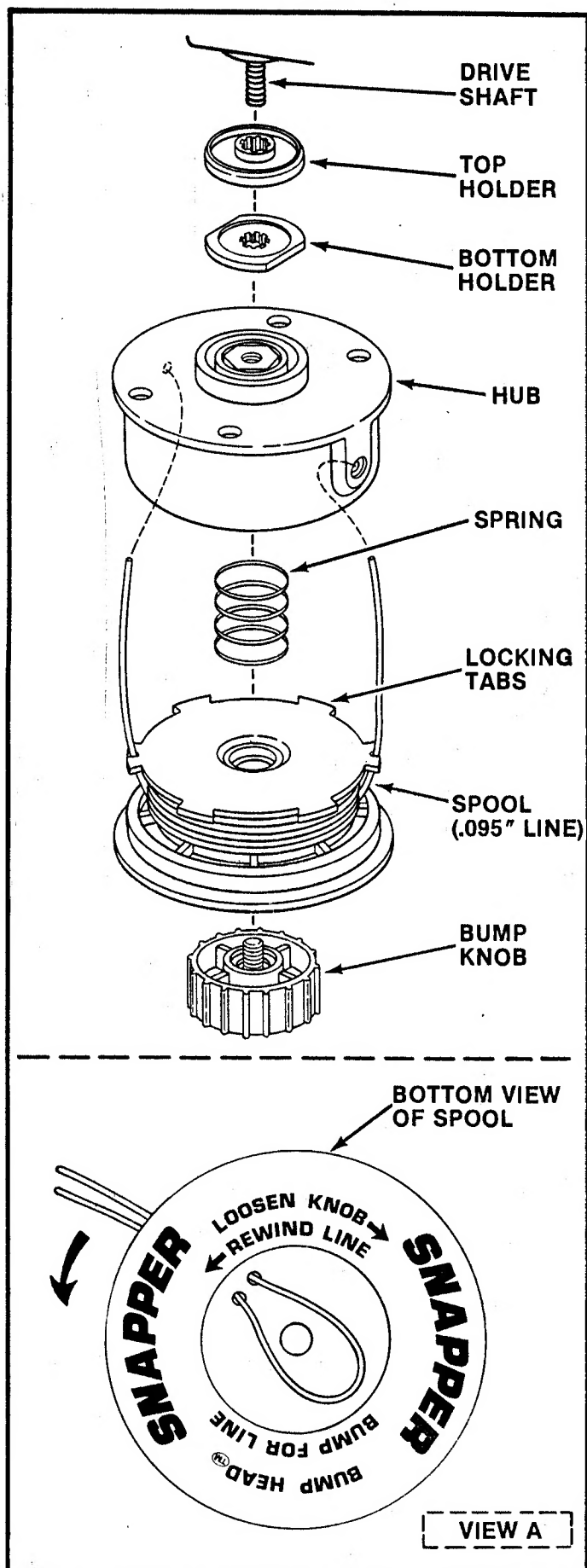


FIG. 6 - BUMP-N-FEED HEAD

SPARK PLUG SERVICE

If the engine will not start or is difficult to start, use the spark plug wrench supplied in the tool kit to remove the spark plug. On two cycle engines, the electrodes quickly become oil fouled, especially if the engine is run at low speed too long. The electrodes may also tend to become carbon fouled. Keep the electrodes clean and the gap set at .025". Use champion DJ85 or equivalent replacement plug.

BUMP-N-FEED HEAD

The BUMP-N-FEED head does not have to be completely removed to replenish the trimming line. New line can be wound on the spool or a new spool can be purchased with line installed. Make sure .095" monofilament line is used. Use the correct Snapper replacement line or spool - Do Not use substitutes, especially wire which can be dangerous.

REPLENISH LINE with engine stopped as follows:

1. Place unit on work bench with weight resting on shield and engine stand.
2. Grasp spool and hub and squeeze hub upward against hub, then twist spool to the left until tabs lock the spool to the hub. The tabs can be viewed thru the four holes in the hub.
3. Remove the bump knob by turning it to the right.
4. Twist the spool to the right to unlock tabs then pull the spool downward to remove.
5. If using the replacement spool, insert ends of twin strands thru openings in hub. With spring in position push the spool into position in hub, cut rubber band before pushing spool all the way into locked position. Reinstall bump knob, then unlock spool by twisting it to the right.

REPLACING LINE: Use 40 feet of Snapper .095" monofilament line to replenish line, using the existing spool. To install, loop the line into two equal lengths, insert ends thru the two holes shown in view A of figure 6, then wind both strands onto the spool in the direction indicated by arrow and wording, "REWIND LINE" on spool.

REPLACING HEAD: The head does not have to be disassembled to remove. To remove the BUMP head, hold the lower holder with the spanner provided in tool kit and turn the bump head to the right until separated from the shaft. When reinstalling the bump head make sure the top and bottom holders are in position shown in figure 6 and are flush against each other and the underside of shield. Hold them in position with fingers or pliers while installing head.

CUTTING BLADE

To install the 8 point weed cutting blade provided as standard equipment with the trimmer, remove the bump head as described in the foregoing instructions and install blade as follows:

1. Position the centering flange of the top holder into hole of the blade. Make sure cutting edge is positioned as shown in inset in figure 7.
2. Position blade and top holder on drive shaft and install bottom holder with flat surface up as shown, start lock nut on drive shaft and hold flats of bottom holder with spanner while securely tightening the locknut. Refer to operational section for special instructions on using blades.

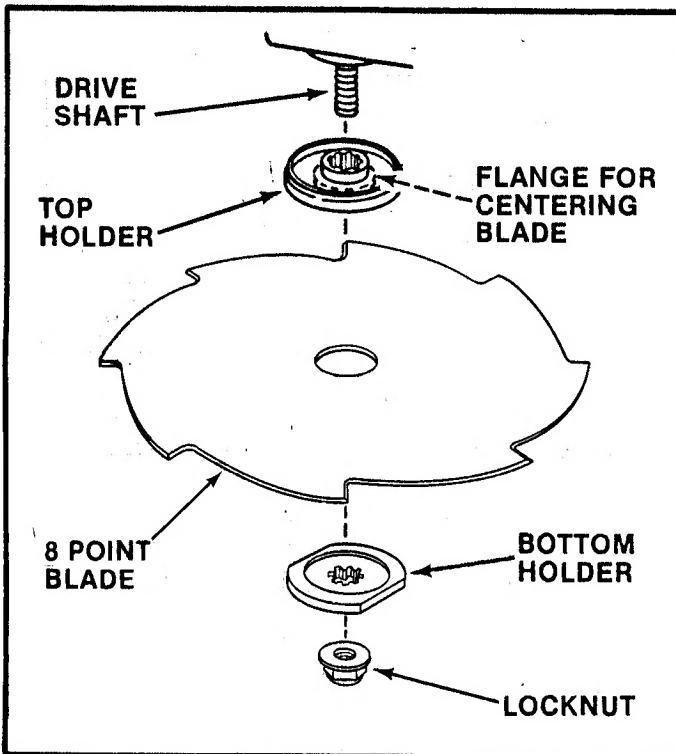


FIG. 7 - STANDARD 8-POINT BLADE

NOTE: Use this same procedure for installing and removing the other available blades (see optional accessories section).

CAUTION: Never install blades using bump head.

BLADE SHARPENING INSTRUCTIONS: Keep the cutting edges equally sharp to retain balance. Replace the blade if any cracks or bad chunks are noted. Use a flat file to sharpen edges. On the standard 8 point blade, sharpen each edge no more than 1/4" in from each tip.

LINE LIMITER SERVICE

Keep the cutting edge of the line limiter sharp by filing frequently with a file. Limiting the line to the design maximum of 18" cutting path provides optimum trimming-cutting operation. Replace the limiter when it becomes excessively worn or badly

nicked. Remove the two locknuts and screws, remove the old limiter, install the replacement in its place and secure with the new fasteners.

FUEL SYSTEM SERVICE

An all position diaphragm type carburetor is used on the model 310. The carburetor has a fixed main jet but has adjustable idle speed and idle mixture adjustments. Do not tamper with these adjustments. If the engine will not start, stalls at idle or stalls under rapid acceleration, and the cause is not due to the air cleaner or muffler, readjust the carburetor as follows. Refer to figure 8 for adjustment points.

1. With engine stopped, turn the idle mixture screw to the right until the needle bottoms lightly--do not force it closed. Turn it to the left 1-1/2 turns.

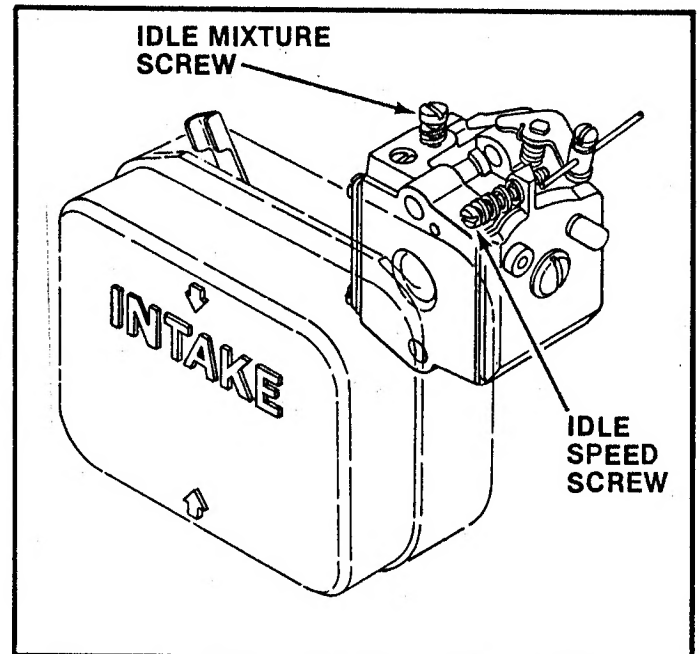


FIG. 8 - CARBURETOR ADJUSTMENTS

2. Turn the idle speed screw to the left first, then to the right until slight movement is noted in the throttle control lever, then continue to the right two full turns.
3. Start the engine and allow time for it to warm up. Check idle speed operation. If the engine stalls, turn the idle speed to the right 1/8 turn at a time until it idles properly. (**NOTE:** BUMP-N-FEED head or blade should not move at idle speed.)
4. Test acceleration. If the engine stumbles or stalls, turn the idle mixture screw to the left 1/8 turn at a time until proper acceleration is achieved. Recheck idle speed setting and readjust as needed.

NOTE: Keep the carburetor free of gum formation by using only clean, fresh fuel. Whenever possible, drain the fuel or run until the fuel tank is dry, particularly when the trimmer is to be stored for any length of time.

OFF-SEASON STORAGE

Before storing the unit during the off-season or for any period where the unit will not be used for 30 days or more, preserve the unit by taking the following steps:

1. Run the engine dry of fuel or drain all fuel from the tank.
2. Lubricate the flexible drive shaft as shown in the instructions on page 5.
3. Remove the spark plug, squirt a small amount of 2-cycle engine oil into cylinder, pull rope starter several times and reinstall the plug.

4. Place a dust cover over unit and store in high area out of reach of children in a dry shed and protected from the weather.

MUFFLER SERVICE

Poor performance may be caused by build-up of carbon in the muffler and exhaust port areas. Check only when engine is cold. Remove the screws securing the heat shield and muffler to the crankcase, pull the muffler off and check exhaust area of cylinder. Use wire brush to remove carbon. Replace muffler if blocked with carbon or damaged. Replace exhaust gasket as needed before reassembling muffler to engine.

MANUFACTURER'S 2 YEAR LIMITED WARRANTY

For two (2) years from purchase date for the original purchaser's residential, non-commercial use [ninety (90) days from purchase date for the original purchaser's commercial, rental, or other non-residential use], and for 3 years on the ignition module, SNAPPER POWER EQUIPMENT, through any SNAPPER dealer will replace, free of charge, any part or parts found upon examination by the factory at McDonough, Georgia, to be defective in material or workmanship or both.

All transportation cost incurred by the purchaser in submitting material to a SNAPPER dealer for replacement under this warranty must be borne by the purchaser.

This warranty does not apply to parts that have been damaged by accident, alteration, abuse, improper lubrication, normal wear, or other cause beyond our control.

There is no other express warranty.

Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to two (2) years from purchase date for the original purchaser's residential, non-commercial use [ninety (90) days from purchase for the original purchaser's commercial, rental or other non-residential use], and to the extent permitted by law any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for consequential damages, under any and all warranties are excluded.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARNING: THE USE OF REPLACEMENT PARTS OTHER THAN GENUINE SNAPPER PARTS MAY IMPAIR THE SAFETY OF SNAPPER PRODUCTS AND WILL VOID ANY LIABILITY AND WARRANTY BY SNAPPER ASSOCIATED WITH THE USE OF SUCH PARTS.

IMPORTANT: Please fill out the attached SNAPPER Product Registration Card immediately and mail to: SNAPPER POWER EQUIPMENT, McDONOUGH, GEORGIA 30253.

SNAPPER POWER EQUIPMENT
McDonough, GA., 30253 U.S.A.

